parts by weight of relative parts by to 100 polymer amount weight) 100 200 290 200 200 420 200 120 82 90 particle diameter (E) inorganic particles 10 25 15 10 S S æ S S S aluminum oxide zirconium oxide zirconium oxide titanium oxide titanium oxide silicon oxide titanium oxide titanium oxide titanium oxide titanium oxide titanium oxide tin oxide tin oxide type of inorganic composite composite composite composite composite composite composite particles particles particles particles tin oxide particles particles particles particles particles particles tin oxide tin oxide tin oxide **g** OptorakeTRproduct name OptorakeTR-OptorakeTR-OptorakeTR-OptorakeTR-OptorakeTR-502 505 503 504 504 | |-١ 1 1 parts by weight of parts by relative (c) quinone diazide polymer amount weight) to 100 18 20 19 20 20 18 19 20 20 24 compound compound compound punodwoo compound compound compound compound punodwoo compound compound compound (1) (4) (2) (2) (2) (3) (2) (1) (3) (2) parts by weight of (parts by relative polymer weight) to 100 absorbing exposure amount 10 20 12 25 12 25 28 25 10 Ŋ punodwoo absorption increase coumarin -4 coumarin -4 coumarin -4 0 heating at 130-400°C compound free of Sumisorb coumarin Sumisorb coumarin Sumisorb coumarin Zislizer during 130 200 130 (q) polybenzoxazole polybenzoxazole (a) polymer polyimide polyimide polyimide polyimide polyimide polyimide polyimide polyimide pecursor varn 1sh K Ø ပ Ω ы ß٠ G × Н כיו 2 S 7 m φ Φ σ Example 1 Example Example Example Example Example Example Example Example Example

Table 1-1

parts by weight of (parts by relative polymer weight) to 100 amount 100 140 100 particle diameter (**mu**) (d) inorganic particles 10 Ŋ S titanium oxide titanium oxide titanium oxide tin oxide type of inorganic composite particles composite particles particles particles tin oxide OptorakeTRproduct name OptorakeTR-OptorakeTR-505 502 502 parts by weight of (parts by weight) relative (c) quinone diazide to 100 polymer amount 20 20 20 compound compound compound compound compound (1) (2) (2) parts by weight of (parts by weight) relative polymer to 100 absorbing exposure amount 20 10 10 (p) compound heating at 130-400°C coumarin -4 absorption Sumisorb Sumisorb increase compound Sumisorb during free of 130 200 140 novolac resin free-radical (a) polymer polymer1zed polyimide pecursor polymer varn 1sh × 7 Σ Example 11 Example 12 Example 13

Table 1-2

(parts by weight of relative parts by weight) to 100 polymer amount 1200 140 100 200 100 290 100 particle diameter (mg) (d) inorganic particles 10 Ŋ 10 10 ı S œ S titanium oxide titanium oxide titanium oxide titanium oxide titanium oxide titanium oxide silicon oxide tin oxide inorganic particles composite composite particles particles tin oxide composite particles composite particles particles crii oxrae type of tin oxide Jarticle product name OptorakeTR-OptorakeTR-OptorakeTR-OptorakeTR-OptorakeTR-OptorakeTR-505 505 502 502 503 502 ; amount (parts by relative weight of parts by polymer to 100 diazide compound weight) 20 20 18 20 19 20 24 20 (c) quinone compound compound compound compound compound compound compound compound compound (1) (2) Ξ (2) (2) (4) (2) 3 (parts by relative weight of parts by polymer weight) to 100 amount 0.5 20 10 61 ~ ı ı (b) compound absorbing exposure light absorption heating at 130-400°C suffering increase compound during A-DMA ; ; ! ľ Zislizer O absorption heating at coumarin-4 130-400°C compound increase coumarin free of Zislizer during ŀ polybenzoxazo free-radical (a) polymer polymerized le pecursor polyimide polyimide polyimide polyimide polyimide polyimide pecursor pecursor pecursor pecursor pecursor polymer pecursor ish varn Þ z 0 a ຜ Д æ H Comparative Comparative Comparative Comparative Comparative Comparative Example 14 Example 15 example 2 example 3 example 4 example 6 example 5 example 1

particles

Table 2

Table 3

			Evaa	Evaaluation Results	70		
	photosensitive	resin	composition	heat-	heat-resistant resi	resin composition fi	film
	transmittance at 365nm (%)	photosensitivity	taper angle of developed pattern	transmittance at 400nm (%)	transmittance at 650nm (%)	taper angle of heat treated pattern	refractive index
Example 1	65%	+	62°	806	918	50°	1.73
. Ехапріе 2	598	+	•09	828	938	45°	1.74
Ехатріе 3	35%	+	55*	888	958	30.	1.76
Example 4	458	+	64°	826	928	45°	1.81
Example 5	628	+	53°	858	806	38°	1.78
Example 6	809	+	61°	918	948	50°	1.77
Example 7	528	+	58,	818	\$06	30°	1.80
Example 8	809	+	62°	828	938	55*	1.73
Example 9	598	+	48.	848	\$06	35°	1.79
Example 10	658	+	40°	878	928	24°	1.78
Example 11	899	+	64°	808	958	50°	1.74
Example 12	678	+	53°	818	978	35°	1.77
Example 13	68\$	+	. *25	888	928	30.	1.74
Example 14	458	+	53°	70%	528	35*	1.75
Example 15	65%	+	وع.	828	948	50	1.75
Comparative example 1	678	+	85°	888	958	78°	1.61
Comparative example 2	818	+	95°	918	948	- 06	1.76
Comparative example 3	10%	(scum found)	l	928	968	l	1.78
Comparative example 4	. 688	(scum found)	ı	898	896	ı	1.82
Comparative example 5	818	+	.78	888	806	80°	1.80
Comparative example 6	828	+	82°	888	\$06	75*	1.74